APPENDIX:

Additional information about the Poverty-Income Ratio (PIR):

Guidelines for calculating the PIR are identical for the 48 contiguous U.S. states plus the District of Columbia, and are calculated separately for Alaska and Hawaii. In NHANES, the PIR is top-coded and ranges from "0" (no income) to "5" (≥ 5 times the federal poverty level (FPL)). A PIR of "1" indicates a family income at 100% of the FPL (see Table S1 for details about the distribution of the PIR in the study population). Eligibility for receiving benefits via the Supplemental Nutrition Assistance Program (SNAP), the premier government food safety net program serving low- and no-income people in the U.S., requires incomes under 130% of the federal poverty level, i.e. a PIR of 1.3.

Table S1: Detail on PIR among men age 20-49 in the United States, NHANES 1999-2012

		Annual gross income, 2012 (all US states, excluding HI and AK)	
	PIR	Individual	Family of 4
Population distribution of PIR, by quartile:			
<25%	1.46	$16,308.20	$33,653
<50%	2.96	$33,063.20	$68,228
<75%	4.83	$53,951.10	$111,332
<99%	5	$55,850.00	$115,250
% of population below PIR thresholds used in sensitivity analysis			
<15%	1	$11,170	$23,050
<35%	2	$22,340	$46,100
<51%	3	$33,510	$69,150
<65%	4	$44,680	$92,200
By food security status			
Food insecure			
Mean (SD)	1.61 (1.14)	$17,983.70	$37,110
Median [IQR]	1.29 [0.79, 2.17]	$14,409.30	$29,735
Food secure			
Mean (SD)	3.34 (1.55)	$37,307.80	$76,987
Median [IQR]	3.63 [1.96, 5.00]	$40,547.10	$83,672
By HIV status			
HIV+, mean			
Mean (SD)	2.18 (1.50)	$24,350.60	$50,249
Median [IQR]	1.89 [0.98, 2.91]	$21,111.30	$43,565
HIV-, mean			
Mean (SD)	2.99 (1.63)	$33,398.30	$68,919
Median [IQR]	3.01 [1.48, 4.86]	$33,621.70	$69,381

Notes: PIR of 1 indicates 100% of the federal poverty level. Analyses used 14-year analytic weights constructed for analysis according to NHANES guidelines and adjustments for sampling design.

Table S2: Prevalence of HIV, sexually transmitted infections and illicit drug use by food security among MSM age 20-49 in the United States, NHANES 1999-2012

	Food secure (n=276)	Food insecure (n=128)	p-value
HIV seropositive, %	5.9	14.1	**<0.05**
HSV 2 infection, %	17.2	30.5	**<0.05**
Self-reported STIs, %	9.2	15.7	0.127
Illicit drug use, past year	10.5	14.6	0.383

Notes: <u>Missing data</u>: Of MSM 20-49, we observed the following rates of missing data: 3% (HIV serostatus), 4.5% (HSV-2 infection), 3% (self-reported genital warts, gonorrhea, and chlamydia), and 0% (substance use). Approximately 2.5% of MSM were missing food security data. <u>Analysis</u>: Analyses used 14- and 8-year analytic weights for the 1999-2012 and 2005-2012 models, respectively, constructed according to NHANES guidelines and adjustments for sampling design, to yield nationally representative results.

Table S3: Association between food insecurity and HIV seropositivity and HIV risk factors among MSM age 20-49 in the United States, NHANES 1999-2012

Outcome:	HIV	HSV-2	Other STIs	Illicit substance use, past year [b]
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Food insecure	2.15 [a]	1.83 [a]	2.58 [a]	0.66 [a]
	(0.82 - 5.67)	(0.95 - 3.53)	(0.91 - 7.33)	(0.26 - 1.68)
Age				
20-29	Ref	Ref	Ref	Ref
30-39	0.95	3.46*	0.45	0.81
	(0.30 - 3.00)	(1.34 - 8.91)	(0.18 - 1.14)	(0.27 - 2.42)
40-49	1.53	3.11*	0.57	2.11
	(0.52 - 4.51)	(1.18 - 8.17)	(0.22 - 1.47)	(0.76 - 5.84)
Poverty-income ratio	0.89	1.01	1.10	0.72*
	(0.68 - 1.16)	(0.82 - 1.26)	(0.82 - 1.49)	(0.55 - 0.96)
High school education	1.01	0.51	0.93	0.79
	(0.22 - 4.52)	(0.22 - 1.19)	(0.26 - 3.34)	(0.26 - 2.42)
Race/ethnicity				
Non-Hispanic white/other	Ref	Ref	Ref	Ref
Hispanic	2.12	1.97	0.76	0.88
	(0.80 - 5.63)	(0.97 - 4.03)	(0.27 - 2.14)	(0.33 - 2.35)
Non-Hispanic black	4.86***	6.60***	1.80	1.12
	(1.93 - 12.21)	(3.07 - 14.17)	(0.73 - 4.47)	(0.37 - 3.32)
In a committed relationship	0.66	1.42	1.38	0.34*
	(0.19 - 2.28)	(0.72 - 2.79)	(0.62 - 3.09)	(0.12 - 0.95)
Household size	0.65	0.90	1.03	1.12
	(0.42 - 1.01)	(0.71 - 1.16)	(0.74 - 1.42)	(0.87 - 1.46)
Current smoking	2.17	1.99	0.52	4.25**
	(0.81 - 5.82)	(0.95 - 4.15)	(0.19 - 1.45)	(1.67 - 10.85)
Heavy drinking in past year	0.73	0.94	0.52	0.42
	(0.24 - 2.26)	(0.45 - 1.98)	(0.17 - 1.57)	(0.11 - 1.56)
History of illicit drug use	0.78	1.33	2.24	
	(0.28 - 2.19)	(0.67 - 2.63)	(0.86 - 5.81)	
Observations	*369*	*364*	*368*	*261*

Notes: *** p<0.001; **p<0.01; *p<0.05. [a] Estimate has a relative standard error (RSE) over 30% and may not be statistically reliable per NHANES analytic guidelines. [b] Illicit substance use in the past year was only available for survey years 2005-2012 (however, history of use used as a covariate in the HIV and STI models was collected in all analysis years). Analysis: Analyses used 14- and 8-year analytic weights for the 1999-2012 and 2005-2012 models, respectively, constructed according to NHANES guidelines and adjustments for sampling design, to yield nationally representative results.